Abstract

A "software" radio in the form of a system is completely configurable and controllable in real-time by software and has a coordination capability to enable scaling to network aggregate data rates in the 10s of megabits
5   per second per base station with no interference among the multiple radios. Base stations can, in turn, be time and frequency coordinated. Scalability is provided by the addition of substantially identical relay radios at each base station. A hybrid spread spectrum method and system of the invention include a protocol which facilitates coordinated frequency hopping. The system does not dwell more
10 than a few milliseconds at any frequency center to achieve high scalability of the system in, for example, a metropolitan area. A single coaxial cable feeds control signals, electrical power signals and RF signals to a microwave antenna to reduce system hardware and installation costs.